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**Remote learning, telehealth, tele-early intervention, school-based
telerehabilitation: The impact of the Covid-19 pandemic on children's
occupational repertoires and routines**

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Remote learning, telehealth, tele-early intervention, school-based telerehabilitation: The impact of the Covid-19 pandemic on children's occupational repertoires and routines

Keywords: telehealth, telerehabilitation, children, occupational repertoires, Covid-19 pandemic

Introduction

The novel coronavirus (Covid-19) was first detected in Australia on 25-01-2020. It quickly spread across the country and impacted the lives of Australians in many anticipated and unexpected ways including our daily engagement in occupations, occupational repertoires, and routines. Depending on whether you lived in a region of Australia like Victoria that experienced quite marked and extended 'lockdown' conditions or Western Australia where more moderate rules were put in place, our daily occupational lives changed. Similar events occurred on a world-wide scale, resulting in a sea-change in relation to patterns of occupation for families and for health service provision on a global level.

Health responses to Covid-19 pandemic

Internationally, different public health responses to the Covid-19 pandemic were put in place, such as wearing face masks, social distancing, using hand sanitizer / hand washing, and getting vaccinated as means to combat the spread of Covid-19.

Doctors and allied health practitioners moved to using a remote model of health delivery using telehealth and telerehabilitation approaches (Önal et al., 2021). For

children with special needs and learning problems, occupational therapy services prioritized a remote consultation model using telehealth and school-based telerehabilitation approaches for school-age children (Dahl-Popolizio et al., 2020; Hermes et al., 2021). Similarly, early intervention providers moved to using a distance service provision model which frequently involved therapists collaborating and coaching parents and caregivers online to empower and upskill them to work with their children in their home environments. The implementation of remote education, telehealth, school-based telerehabilitation, and tele-early intervention service approaches took place concurrently however, with significant changes in children's repertoires and required the development of new insights into children's daily routines.

Impact of Covid-19 on the daily lives of children

Many aspects of the daily life of children, parents / caregivers, and other family members were impacted by the presence of Covid-19 pandemic (Australian Institute of Health and Welfare, 2021; European Network of Ombudspersons for Children, 2020). During 2020 and 2021, two of the most noticeable impacts were the move of children's education from face-to-face classroom-based to remote learning and home working for parents/carers. Many life roles including being a student, worker, volunteer, caregiver, leisure and play participant, religious participant, family member, or home maintainer were all affected. Travel restrictions, nightly curfews, the length of time you could leave your home, and the reasons for leaving your home were all limited to protect people from getting infected and spreading the Covid-19 virus.

For children, this often meant significant changes in daily routines: not being able to socialize with extended family members or friends, not attending school, limited involvement in play and leisure activities, decreased opportunities for participation in physical activities, and increased screen-time for education, social and leisure pursuits (Roe et al., 2021). Therefore, patterns of occupation changed alongside associated experiences of meaning, belonging, and participation. Consequently, reflections arise on the impact on occupational repertoires and children's routines.

Occupational repertoires and routines

A person's *occupational repertoire* refers to the "constellation of meaningful daily activities (occupations) a person has at a certain point in life" (Njelesani et al., 2020, p. 326) while *routines* are viewed as "patterns of behavior that are observable, regular, and repetitive and that provide structure for daily life" (American Occupational Therapy Association [AOTA], 2020, p. 7412410010p82). In addition, according to Njelesani et al. (2020) *occupational repertoire development* "involves the progression in capacity of occupations and their resulting incorporation into a person's array of occupations over time" (p. 326). Davis and Polatajko (2010) identified three occupational repertoire patterns: *contracted occupational repertoires*, *unmanageable occupational repertoires*, and *unsatisfying occupational repertoires*. Contracted occupational repertoires occur when there is a marked reduction in the number of occupations that a person participates in. Unmanageable occupational repertoires occurs when the number of occupations in one's daily life are too many to handle or do not adequately meet one's hopes, wants, necessities and demands. Unsatisfying occupational repertoires refers to situations when the range of occupations that a person engages with are sufficient but provide little to no significance, importance, fulfillment, meaning, or purpose (Davis & Polatajko, 2010).

In addition, during covid, we experienced significant adaptations to familiar repertoires, that warranted immense flexibility and a steep learning curve for adopting new occupational repertoires into home and family life.

Children's daily pre-pandemic occupational repertoires and routines would have been quite different to what they have been during the last two years. Children likely had more varied occupational repertoires before the Covid-19 health measures and restrictions were put in place. During the Covid-19 pandemic, children's occupational repertoires became more contracted in range, diversity, interest level, time actively involved in, and social participation with others in many parts of Australia (Nathan et al., 2021) and internationally (Paterson, 2021). For example, pre-pandemic children would have gone to school to engage in learning occupations, in play occupations with friends outside, in community sports or interest groups, or gone to the local park to climb on the playground structures. Clearly, children's play repertoires were negatively impacted with limited opportunities to access play environments and play resources (Moore et al., 2020; Walsh et al., 2021).

Children's daily routines also would have been more diverse, interesting, and experiential compared to Covid-19 limited daily routines that reduced the scope, breadth, and frequency of daily occupations (Kovacs et al., 2021; Segre et al., 2021). For instance, at some points during the pandemic, children were unable to leave home for longer than one hour per day to engage in exercise activities. Playground structures, community swimming pools, council libraries and local soccer fields were all closed. Instead, children's activity repertoires became more restricted in home environment and included more passive type occupations including watching TV, with increased online participation using iPhone or engaging in online gaming activities.

Other impacts included parents and caregivers trying to balance the dual demands of supervising their children in remote learning activities while concurrently meeting their own paid work obligations (Kovacs et al., 2021). Often the computers and internet technology that children used to attend remote learning online and parents working from home operated were co-located in close proximity to each other in the same home environment.

The outcomes of these significantly altered routines were evident. Children's routines were disrupted with some parents and caregivers reporting sleep pattern disruptions, behavioural issues, and daily routines being disorganised and chaotic (Scarpellini et al., 2021; Segre et al., 2021). Evidence is emerging that Covid-19 restrictions also negatively impacted children's mental health and social connectedness specially for children with special needs (Sancho et al, 2021), while the overall daily life stress and pressure that parents and caregivers encountered increased (Araújo et al., 2021; Kirsch et al., 2021).

Role for occupational therapy to promote balance in children's occupational repertoires and routines

Davis and Polatajko (2010) remind us as occupational therapists, "we need to be mindful of the nature of our clients' occupational repertoires and the personal, occupational and environmental situations that can hinder and/or enable it" (pp. 20-21). As occupational therapists, we are concerned with children's occupational repertoires, healthy daily routines, optimised learning opportunities, functional physical skills, and positive mental health (AOTA, 2020). Concurrently, we engage with and support parents, caregivers, and families to promote occupational balance

and satisfaction in occupational repertoires and activity participation. With Covid-19 pandemic impacting so many aspects of our daily occupational lives, occupational therapists are well situated to be key strategic partners with children and families. Especially considering how children's occupational repertoires and routines have been curtailed, restricted, and constrained and adapted during the pandemic, it is particularly important for occupational therapists to be agents of change using telehealth and telerehabilitation strategies to ensure that children's occupational repertoires and routines are authentic, revitalised, broadened, energised, and empowered. As such home, school, and community environments can be used by occupational therapists to promote creative, interesting, engaging, and health promoting occupational repertoires and routines for children that promote occupational repertoire development. In sum, by including an "exploration of our clients' occupational repertoires [and routines] to our practice concern we can come to understand their occupational lives, in totality; and by extrapolation, the full contribution occupation makes to their health and well-being" (Davis & Polatajko, 2010, p. 20).

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